



IN THE CLAIMS

- (Previously Presented) A conductive system comprising:
- a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and
 - a plurality of conductive structures embedded in the foamed material layer.
2. (Previously Presented) A conductive system comprising:
- a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and
 - a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material layer has a foamed thickness of between about .4 microns and about 3.4 microns.
3. (Previously Presented) A conductive system comprising:
- a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and
 - a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material layer has a dielectric constant of between about 1.2 and about 1.8.
4. (Original) The conductive system of claim 1, wherein the foamed material layer is a foamed polymer layer.
5. (Previously Presented) A conductive system comprising:
- a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and

a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material layer is a foamed aerogel layer.

6. (Previously Presented) A conductive system comprising:
 - a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and
 - a plurality of conductive structures embedded in the foamed material layer.
7. (Previously Presented) A conductive system comprising:
 - a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and
 - a plurality of conductive structures embedded in the foamed material layer, wherein the plurality of conductive structures embedded in the foamed material layer are conductive circuit lines.
8. (Original) The conductive system of claim 6, wherein the foamed material is a foamed polymer.
9. (Original) The conductive system of claim 6, wherein the foamed material is a foamed polyimide.
10. (Previously Presented) A conductive system comprising:
 - a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and
 - a plurality of conductive structures embedded in the foamed material layer, wherein the foamed material is a foamed polymer containing silane.

11. (Previously Presented) A conductive system comprising:
 - a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and
 - a plurality of conductive structures embedded in the foamed material layer, wherein the cell size is less than about .1 micron.
12. (Previously Presented) A conductive system comprising:
 - a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic; and
 - a plurality of copper structures embedded in the foamed material layer.
13. (Previously Presented) A conductive system comprising:
 - a substrate;
 - a foamed material layer on the substrate, the foamed material layer having a surface that is hydrophobic and a cell size of less than about one micron; and
 - a plurality of aluminum structures embedded in the foamed material layer.
14. (Previously Presented) The conductive system of claim 2, wherein the substrate comprises a semiconductor.
15. (Previously Presented) The conductive system of claim 2, wherein the substrate comprises a doped semiconductor.
16. (Previously Presented) The conductive system of claim 3, wherein the substrate comprises an undoped semiconductor.
17. (Previously Presented) The conductive system of claim 3, wherein the substrate comprises an epitaxial layer supported by a semiconductor.

18. (Previously Presented) The conductive system of claim 5, wherein the substrate comprises an epitaxial layer supported by an insulator.
19. (Previously Presented) The conductive system of claim 5, wherein the substrate comprises silicon.
20. (Previously Presented) The conductive system of claim 7, wherein the substrate comprises germanium.
21. (Previously Presented) The conductive system of claim 7, wherein the substrate comprises gallium arsenide.
22. (Previously Presented) The conductive system of claim 10, wherein the substrate comprises silicon-on-insulator.
23. (Previously Presented) The conductive system of claim 10, wherein the substrate comprises silicon-on-sapphire.
24. (Previously Presented) The conductive system of claim 11, wherein the substrate comprises germanium.
25. (Previously Presented) The conductive system of claim 11, wherein the substrate comprises gallium arsenide.